The Good, Bad, and the Ugly: Treatment of Complex Regional Pain Syndrome in Pediatrics

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Objectives

1. Demonstrate a basic understanding of Centralized Pain Syndromes and CRPS.

2. Gain knowledge to directly implement to clinical care.

3. Gain insight about implementing alternate treatment methods with complex cases.

4. Feel more comfortable treating patients with CRPS and Centralized Pain Syndromes.

5. Understand how to create individualized progression strategies and plans.
Centralized Pain Syndrome

- Fibromyalgia
- Myofascial Pain Syndrome
- Diffuse Musculoskeletal Pain
- Amplified Musculoskeletal Pain Syndrome (AMPS)
- Complex Regional Pain Syndrome (CRPS)
  - Reflex Sympathetic Dystrophy (RSD)
  - Reflex Neurovascular Dystrophy (RND)
  - Amplified Centralized Pain

References: Yunus M; Bettini L; Bennet R
Understanding CRPS (Harden, Bruehl, Standon-Hicks, Finnis, Rabin)

Pathophysiology:
- Dysfunctional interaction between central and peripheral nervous systems
- High levels of nerve impulses and pain signals
- Immune and autonomic responses that can lead to inflammatory symptoms that you can visibly see (redness, warmth, swelling)

Important components of evaluation:
- History
- Range of motion, strength, posture
- Sensory dysfunction
- Functional mobility
- Patient Goals

In Pediatrics- Remission occurs 90% of the time, relapse is common (30%) (Rabin)
How to Explain Pain

**How do you know if the pain is “ok” to push through?**

- If it feels the same as normal—nothing new
- If you are using proper alignment, moving at the proper speed, and using the correct muscles
- Your muscles are still not fatigued and you are still completing the activity without compensatory strategies

**Metaphors/Examples:**

- For significant pain response and panic: “When you ____, your nerves are over-responding like you do to a fire drill before anyone tells you it is only a drill. We have to re-train your nerves by doing these activities.”
- For guarded movements: “Your body is acting like a band aid— it is trying to protect you from short term pain but might be causing long term issues.”
- For anticipatory responses: “If you have already decided it is going to hurt, it probably will; if you have already decided you can’t do it, you probably won’t be able to…let’s reframe this in a more positive way to help you mind and your body.”
- Importance of consistency and patients: “Your body has to be retrained that weight bearing and movement is normal and safe, but the only way to do that is consistently completing challenging things”
  - i.e you can’t get better at math if you don’t do the homework, you can’t get better at basketball if you don’t go to practice= doing the work is always hard at first but promotes a better outcome
Specific Areas of Treatment for CRPS

- Desensitization
- Swelling management
- Range of motion
- Weight bearing
- Gait training
- Functional mobility
- Strength and endurance
- Alignment, symmetry and body awareness
- Balance and neuromuscular re-education
- Guarding/Habitual movement education
- Patient and family education
- Patient goals and motivations!
- Be creative and fun!

Quick diagnosis and initiation of therapies is important after ruling out acute injury and obtaining appropriate medical clearance.
Treatment of Complicating Physical Factors

• Swelling:
  • AROM
  • compression
  • elevate as appropriate

• Contractures:
  • positioning
  • AROM/PROM/stretching
  • manual therapy
  • splinting
  • biofeedback/sEMG

• Osteopenia:
  • progress mobility in the pool
  • nutrition consult
  • gradual increase in weight-bearing
Pain Exposure vs Conventional Treatment of CRPS type 1

**Pain Exposure PT**

Background:
- Pain is a false warning sign
- Regain functional activity despite pain level

Intervention Focus:
- Exposure to painful movements and activities
- Avoid medication, TENS, splints, walking aids
- Forced use
- Progressive loading
- Education focuses around background information
- Internal locus of control

**Conventional Treatment**

Background:
- Pain is a sign of dysfunction
- Improve functional activity while controlling pain

Intervention Focus:
- Depends on pain limits
- Medication focus
- TENS
- Aids
- Splints
- Mild exposure and progressive loading
- Education focuses around background information
- External locus of control

Treating the more complex...

• Used the golden rules of chronic pain
• Find a balance in your treatment interventions
• Introduce and incorporate coping strategies
• Use a progression plan
  • Fear list
  • Short/long term goal setting from a patient or clinician perspective
  • Progress a specific activity
  • Use check lists or outlines
  • Sticker charts for goals
Golden Rules (Zeltzer and Schlank)

• All Pain Is Real
• Improvement Is First Measured By Increased Functioning
• Don’t Ask If They Are In Pain
• Exercise Is Good For Sleep And For Chronic Pain
• Sleep Is Good
• Reduce Anxiety
• Positive Mental Attitude
• A Long-Term Problem Requires A Long-Term Solution
Using A Multidisciplinary Approach: Finding a Balance

Introduce Coping Strategies
- Imagery
- Acupressure
- Deep Breathing/Belly Breathing
- Distraction
- Progressive Muscle Relaxation
- Positive Mental Attitude
- Problem Solving
Hardest/Scariest

- Someone touching my foot
- Wearing a shoe

Medium Challenge

- Wearing a sock
- Going in the pool or taking a bath

Easiest Challenge

- Moving my ankle
- Putting my foot down flat when sitting in a chair

“I am hesitant”

“This makes me too anxious”

“I need a pep talk”
<table>
<thead>
<tr>
<th>Stretching/ROM activity</th>
<th>Therapist ankle pumps</th>
<th>Therapist Stretch</th>
<th>Therapist Stretch</th>
<th>Therapist ankle pumps</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strengthening activity</strong></td>
<td>Leg Bike Lefty only</td>
<td>Seated Scooter Lefty Only</td>
<td>Floor ladder</td>
<td>Rockers</td>
</tr>
<tr>
<td><strong>Lefty activities</strong></td>
<td>Balance board</td>
<td>Incline wedge</td>
<td>Wedge Mat</td>
<td>Big Step Ups</td>
</tr>
<tr>
<td><strong>Bilateral activities</strong></td>
<td>Scooter Activities</td>
<td>Leg bike</td>
<td>Trampoline</td>
<td>Incline Treadmill</td>
</tr>
<tr>
<td><strong>Push Off</strong></td>
<td>5 Wall Hand Stands</td>
<td>10 Wall Hand Stands</td>
<td>10 spider cage jumps</td>
<td>15 spider cage jumps</td>
</tr>
</tbody>
</table>

**Fun Work**

<table>
<thead>
<tr>
<th>T-swing</th>
<th>Tube Swing</th>
<th>Platform Swing</th>
<th>Net Swing</th>
<th>Belly Scooter</th>
<th>Swivel Scooter</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Keep it up”</td>
<td>Wii Games</td>
<td>Arm Bike</td>
<td>Uno/Card games</td>
<td>Acrobat swing</td>
<td>Hammock Swing</td>
</tr>
</tbody>
</table>
Return to Life

Return to School
- Modified Mobility
- Movement/Pace breaks
- Modified Gym Class or Recess

* Talk with Schools!

Return to Sports/Leisure
- Gradual progression
  - Prevents acute injury or flare
- Only change one “area” of challenge
  - Practice
  - Sports
  - Intensity
  - Total Time

* Talk with Coaches!
Educational topics

• Be sure to educate the “team” (patients, families, other medical providers):
  • Age appropriate explanation of pathophysiology
  • Rationale for therapeutic activities and skill progression
  • Importance of pacing and balance
    • Work through pain experience not beyond ability to cope
    • “Just right challenge”
  • Proper posture, body mechanics, and alignment
    • Point out the individuals ways of compensation- they aren’t therapist and don’t know!
• Importance of retraining habitual movement patterns
  • Maladaptive movement patterns will only perpetuate the pain cycle
Case #1: 15 year old female with CRPS of the R LE

- January 2016 - fell down the stairs, tripped over a shoe, immediate pain in R LE
- LE pain has not allowed her to attend school or participate in social activities
- History of CRPS in the left UE with OT for 3 months, however currently no UE pain
- Had been attending outpatient PT regularly working on desensitization and walking

Presentation at Admission:

- Significantly decreased AROM of R foot and ankle in all planes, ankle postured in plantarflexion and inversion/supination in resting
- Ambulating short distances with wheeled walker and walking boot; significantly decreased R stance, absent R heel strike, supination, decreased R terminal knee extension
- Compensatory strategies: pelvic rotation, lumbar extension, use of hypermobility through hips, back, and thoracic spine

Other important diagnoses: Depression, Anxiety, Asperger's
Walking/Night Splint

Position outside of splint vs in splint

Second splint vs first splint
Case # 1:

- **Admission Testing:**
  - Verbal pain rating 10/10
  - UAB Pain Scale: 6.0
  - 10/80 LEFS
  - Jump rope one minute: 0 d/t limited standing balance
  - Sit- to- stand: 0 (2 attempted w/ minimal R WB)
  - One minute stair climb: 0 (1 completed w/UE support)
  - 6 minute walk: 261' with wheeled walker and walking boot

- **Discharge Testing:**
  - Verbal pain rating: 1/10
  - UAB Pain Scale: 5.0 (however 2.5 at lowest)
  - 26/80 LEFS
  - Jump rope one minute: 13 (step-overs)
  - Sit- to- stand (1 minute): 10
  - One minute stair climb: 8 steps ups
  - 6 minute walk: 728’ without assistive device (with acute hip issue at d/c)
Case #2: 9 yr old male with CRPS of the L knee

- December 2016- peer fell on left lower extremity /knee at recess with 2 micro-fractures (tibia and fibula)
- Casted for 4 days and then several weeks of bracing while non-weight bearing
- LE pain has stayed relatively active using modifications (avoiding pants or fabric over knee, using assistive equipment)
- Being seen for PT weekly for 2.5 months prior to admission to program
- In program for 4 weeks (1 additional week)

Presentation at Admission:
- Decreased active left knee extension and minimal weight bearing
- No significant swelling, color changes, or other skin changes noted other than allodynia
- Ambulating with toe touch weight bearing and use of bilateral axillary crutches
- Gait (taken from eval): Asymmetrical, decreased stance on left, decreased R step length, lateral trunk lean right, lack of terminal knee extension on L, absent L heel strike and toe off; completed with B crutches, single axillary crutch, and without crutches
- Compensatory strategies: pelvic rotation, lumbar extension, trunk rotation, use of hypermobility through R LE

Other important diagnoses: ADHD
Case #2
Case # 2:

Modified single leg stance

Balance/Weight shifting with games
Case # 2:

**Admission Testing:**
- Verbal pain rating 8/10
- UAB Pain Scale: 6.5
- 15/80 LEFS
- Jump rope one minute: 0 d/t limited standing balance
- Sit- to- stand: 0 (16 attempted w/ asymmetric technique)
- One minute stair climb: 0 (4 completed w/single crutch and use of handrail)
- 6 minute walk: 728’ with single axillary crutch

**Discharge Testing:**
- Verbal pain rating: 7/10
- UAB Pain Scale: 2.0
- 49/80 LEFS
- Jump rope one minute: 67
- Sit- to- stand (1 minute): 43
- One minute stair climb: 52 steps ups
- 6 minute walk: 1843’ without assistive device
- Progressed to short distance jogging and short interval jumping
Case Studies # 3

Case #3: 11 yr old female with CRPS of the R lower extremity (hip and buttocks)

- February 2016 she fell off a swing and landed on her right hip, initially she was left with a tingling sensation that turned into intense pain
- She was unable to attend school or participate in other social or leisure activities due to pain and used a wheelchair for all mobility
- They put off rehab recommendations due to a lack of readiness
- Being seen for PT 2-3 x weekly and has not walked since February of 2016
- In program for 6 weeks (plus 2 additional weeks for intensive PT/OT)

Presentation at Admission:

- Avoided ALL weight bearing through R buttock and hip, side sitting in wide wheel chair with legs at 90+ degrees flexion
- Not wearing shoes, socks, or pants due to allodynia
- Unable to ambulate, transitioned from w/c to mat table with assist and maintained L side sit
- Compensatory strategies: pelvic rotation, lumbar extension, trunk rotation, use of hypermobility through R LE

Other important diagnoses: significant anxiety, ADHD, complex family history, behavior
Case # 3:

**Admission Testing:**

- Verbal pain rating 6/10
- UAB Pain Scale: 6.5
- 23/80 LEFS
- R knee flexion contracture: - 100 degrees extension (highly resistant and combative to attempted ROM)
- Jump rope one minute: 0 d/t resistance to weight bear
- Sit- to- stand: 0 d/t resistance to weight bear
- One minute stair climb: 0 d/t resistance to weight bear
- 6 minute walk: 0 d/t resistance to weight bear
Case # 3:

- Benches and wedges for positioning assist to decrease fear and improve comfort
- Initiated weight bearing with therapy ball per patient choice
- Did well when she couldn’t “see” her hip/knee position
- Did well with distraction...

Cleveland Clinic Children's
Case # 3 continued...

This took about 2-3 weeks just to get her into this position in the stander (used foam wedges, towel rolls, and strapping)

Completed tall and ½ kneel to work on core control and stability for ambulation
Case # 3 continued...

Discharge positioning still varied based on activity, amount of weight bearing, and distraction.

Too good to be true!
**Discharge Testing:**
- Verbal pain rating: 7/10
- UAB Pain Scale: 2.0
- 49/80 LEFS
- R Knee flexion contracture: -4 degrees of extension at best PROM, -18 degrees of extension actively, -28 degrees of extension in functional/weight bearing positions
- Jump rope one minute: 7 modified step overs without UE support
- Sit- to- stand (1 minute): 20 with walker
- One minute stair climb: 11 steps ups with walker
- 6 minute walk: 720’ with walker or 300’ without assistive device (both asymmetric gait)

**At discharge:**
- Used dynasplint for PROM every night for the last 2 weeks
- Could propel leg bike independently at an appropriate pace
- Tolerated full stand in stander for short intervals
- Could independently use stairs with single hand rail and inconsistent pattern
CRPS Outcomes

Data collected between 2014-2017, N=50

Means (SD) on objective (physical activity) measures at admission and discharge.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Admission Mean (SD)</th>
<th>Discharge Mean (SD)</th>
<th>Paired t-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kneeling Push-Ups</td>
<td>18.0 (13.79)</td>
<td>28.25 (14.36)</td>
<td>-5.620***</td>
</tr>
<tr>
<td>Elbow Planks</td>
<td>22.19 (17.15)</td>
<td>47.1 (17.39)</td>
<td>-8.696***</td>
</tr>
<tr>
<td>Step-Ups</td>
<td>11.1 (11.17)</td>
<td>30.56 (18.26)</td>
<td>-6.328***</td>
</tr>
<tr>
<td>Jump Rope</td>
<td>2.86 (7.18)</td>
<td>33.6 (30.55)</td>
<td>-5.965***</td>
</tr>
<tr>
<td>Squat Box Lifts</td>
<td>7.74 (5.95)</td>
<td>14.63 (9.22)</td>
<td>-3.964***</td>
</tr>
<tr>
<td>Box Carry</td>
<td>4.0 (4.32)</td>
<td>9.89 (6.24)</td>
<td>-5.266***</td>
</tr>
<tr>
<td>Sit to Stand</td>
<td>7.07 (10.44)</td>
<td>24.25 (11.46)</td>
<td>-7.414***</td>
</tr>
<tr>
<td>6 minute walk</td>
<td>565.5 (763.9)</td>
<td>1553.06 (690.07)</td>
<td>-4.813***</td>
</tr>
</tbody>
</table>

Means (SD) on self-report measures at admission and discharge.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Range</th>
<th>Admission Mean (SD)</th>
<th>Discharge Mean (SD)</th>
<th>Paired t-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEFS</td>
<td>0–80</td>
<td>33.08 (16.48)</td>
<td>50.65 (19.45)</td>
<td>8.066***</td>
</tr>
<tr>
<td>UEFI</td>
<td>0–80</td>
<td>48.55 (18.08)</td>
<td>62.95 (14.28)</td>
<td>8.039***</td>
</tr>
<tr>
<td>Pain</td>
<td>0–10</td>
<td>7.35</td>
<td>7.68</td>
<td>.888</td>
</tr>
</tbody>
</table>

**p<.01
***p<.001

It is typical for pain to not decrease quickly- this matches chronic pain treatment philosophy!
Evidence Based Outcome Measures (T.Packham et al)

Quality Recommended Assessments
• Grip Strength
• Foot Function
• VAS Pain Scale
• Walking Stairs
• Walking Endurance
• Sit to Stand (Rising and Sitting)
• Short Form McGill
• Neuropahty Pain Questionnaire

Low quality rating assessments (<50%)
• Radboud Skills Questionnaire (RSQ)
• Upper limb activity monitor
• CRPS evaluation
• Impairment sum score
• RDS assessment
Specific Outcome Tests (Callanen, A)

General Recommendation: Health-related quality of life measures should be included due to the potential impact of CRPS in children’s physical, psychological, and social lives

- Child Health Questionnaire (CHQ)
- Health profile specifically developed for children and adolescents; short form and full-length
- Pediatric Quality of Life Inventory (Peds-QL)
- Patient Specific Functional Scale (PSFS)
- Fear Avoidance Beliefs Questionnaire (FABQ)
- Functional Disability Index (FDI)
- Dallas Pain Questionnaire
- Sheehan Disability Scale: developed to assess functional impairment in 3 domains: work/school, social, and family life
Q & A Time!

Always feel free to email any of the therapy team if questions arise!
Chronic Pain Resources:
To help the clinician and the family understand!

Video Links:
1. Chronic Pain in 5 minutes
2. Pain Byte Videos

- Progression Plans for specific sports/activities on slide 33 and 34
- Therapy Intervention Activity Progression, slide 35-37
- Behavior/Goal Sheets slide 38
- Adult vs Children CRPS slide 39
- Reference List: systematic/clinical reviews on CRPS
  - Callanen A
  - Rabin J
  - Bean
Return to Cheer/Gymnastics:

• Must have 4+ muscle strength through left glute max, glute med, rectus, VMO, hamstring, gastroc, anterior tib, peroneals.

• Must be able to have initiated jogging and complete symmetrically for at least 10 minutes.

• Must be able to identify correct and incorrect landing technique 80% of the time without cuing from therapist, parent, or coach.

• Must be completing all skills equally on both sides, identify when you begin using asymmetric movement patterns, and take appropriate rest break.

• Must be independent with taking rest/pace breaks without encouragement when experiencing muscle and/or joint fatigue.

Additional Resources Continued...
Return to jogging and soccer:

- You may start jogging after you can consistently complete the following activities:
  - Walk for 15 minutes without rest break and without limping
  - Single leg balance on right leg for 30 seconds
  - 10 mini hops on right leg
  - Maintain school attendance, completion of homework, and all other required daily activities

- Start by jogging for 1 minute interval x 2, alternate with 1 minute intervals of walking
  - If you begin limping at any point during jogging, walk for remainder of interval
  - Initially don’t jog more than 3 times per week
  - Progress by adding 1 minute to each interval OR adding additional interval
    - Don’t progress more than 2 times per month initially
    - Complete previous step consistently for 2 weeks without increased difficulty with walking, school, or other activities before you progress to next step

- Once you can jog for 5 minute intervals x 2, you can begin working on dribbling and shooting a soccer ball in backyard or playground
  - Limit to 10 minutes initially
  - Progress by adding 2-3 minutes to playing time

- Once you can play for 30 minutes informally, you can return to soccer practice
  - Start with one practice per week, 30 minutes with appropriate breaks
  - Add 5-10 minute intervals until you can tolerate a full practice
  - If at any time you are unable to complete full day of functional activities (attend school, help with chores, play with friends, do homework, etc) due to pain then you must no longer participate in soccer practice until able to appropriately use coping strategies.
  - If at any time Teagan is not walking with proper pattern, decrease high impact activities and running until walking pattern improves.
  - Once you can participate in full practice at least 3 times in a row, then you can use similar gradual progression to transition to playing in games (start with 10 minutes and progress 5-10 minutes each game)

Additional Resources Continued...
<table>
<thead>
<tr>
<th>Week Of:</th>
<th>Example Activity Progression Sheet</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sensory/Positioning</strong></td>
<td>Foot flat on foot plate</td>
</tr>
<tr>
<td></td>
<td>Hips back in chair with foot flat</td>
</tr>
<tr>
<td></td>
<td>Wear pants all day</td>
</tr>
<tr>
<td></td>
<td>Wear pants all day</td>
</tr>
<tr>
<td></td>
<td>Wear pants all day</td>
</tr>
<tr>
<td><strong>Range of Motion/Standing</strong></td>
<td>Stander progression</td>
</tr>
<tr>
<td></td>
<td>Stander progression</td>
</tr>
<tr>
<td></td>
<td>Stander progression</td>
</tr>
<tr>
<td></td>
<td>Stand with walker x 3</td>
</tr>
<tr>
<td></td>
<td>Stand with walker x 5</td>
</tr>
<tr>
<td><strong>Walking</strong></td>
<td>Use walker in pool area</td>
</tr>
<tr>
<td></td>
<td>Use walker with R toe tap pattern 50% without reminders</td>
</tr>
<tr>
<td></td>
<td>Use walker with R toe tap pattern 75% without reminders</td>
</tr>
<tr>
<td></td>
<td>Use walker with R toe tap pattern &gt; 75% without reminders</td>
</tr>
<tr>
<td></td>
<td>Use walker with R foot flat position for short intervals</td>
</tr>
<tr>
<td><strong>Follow through with therapy goals outside of sessions</strong></td>
<td>Sit in typical chair in 2 sessions</td>
</tr>
<tr>
<td></td>
<td>Transition in session with walker x 1-2</td>
</tr>
<tr>
<td></td>
<td>Transition in session with walker x 2-3</td>
</tr>
<tr>
<td></td>
<td>Transition in session with walker 50% of the time</td>
</tr>
<tr>
<td></td>
<td>Transitions in session with walker 75% of the time</td>
</tr>
</tbody>
</table>

*Additional Resources Continued...*
### Sensory Progression

- **Touch sock to foot** (1-5 times)
- **Touch brush to foot** (1-5 times)
- **Tolerate rubbing** (5-30 seconds)
- **Tolerate brushing** (5-30 seconds)
- **Wear sock for short interval** (5-10 minutes)
- **Wear sock for full session** (45-60 minutes)
- **Wear shoe for short interval** (5-10 minutes)
- **Wear shoe for full session** (45-60 minutes)
- **Joint Compression (heel pound/toe tap)**
- **Functional positioning w/ sustained input**

### Weight Bearing Progression

- **Place part of foot on floor**
- **Place full foot on floor**
- **Place foot on floor with light pressure** (25% weight)
- **Place foot on floor with moderate** (50% weight) pressure
- **Place foot on floor with full** (75-100% weight) pressure
- **Tolerate short interval dynamic activities with pressure through foot on floor** (1-30 seconds)
- **Tolerate longer interval dynamic activities with pressure through foot on floor** (30+ seconds)
- **Complete functional task while maintaining pressure through foot on floor**

### Standing Balance

- Place full foot on floor in standing
- Place foot on floor in standing with limited UE support
- Ability to maintain alignment: activate and deactivate proper muscles through LE’s
- Standing weight shifting 2 of 4 directions Without compensation
- Standing weight shifting 4 of 4 directions Without compensation
- Standing without UE support and limb staying in contact with ground without compensation
- Standing without UE support and limb staying in contact with ground with weight shifting in base of support
- Standing without support and limb staying in contact with ground with weight shifting out from base of support
- Modified single leg stance
- Single leg standing (5-10 seconds)
- Single leg Standing (10-15 seconds)
### Ambulation Progression

**Tolerate** standing with foot on floor with weight shifting in 4 of 4 directions

Complete rockers (forward/backward weight shifts) with support

Short distance on even ground with device (10-50 ft)

Moderate distance on even ground with device (50-100 ft)

Longer distance on even ground with device (100+ feet)

Short distance with less restrictive device (10-50 ft)

Moderate distance with less restrictive device (50-100 ft)

Longer distance with less restrictive device (100+ feet)

Complete rockers without device/support

Short distance without device (10-50 ft)

Moderate Distance without device (50-100 ft)

Longer distance without device (100+ ft)

Symmetry (50’ intervals)

Symmetry (100’ intervals)

Stairs (reciprocal)

Stairs at functional pace (reciprocal, 30 sec, 1 way)

### High Impact Progression

**Single Leg Stance** 20-30 seconds

**Single Leg Stance** 30-60 seconds

Single Leg Dynamic Balance (heel raises, toss/catch activities, functional tests, etc)

**Jumping Initiation**

Jump w/ even take off- landing (4 of 5)

Hop on Affected LE (4 of 5)

**Jogging**

Jog w/ symmetry 50 ft

### Progression Chart - FOR CLINICIAN USE ONLY

**Additional Resources Continued...**
To earn a sticker you must:

1. Use crutch or crutches safely.

2. Kick right leg and tap right foot on the floor with each step.

3. Keep right toes facing forward and not drag leg behind you.

For every 15 stickers, “Sally” will get to go to the prize box!
CRPS in Adults vs Children...what does the literature say? (Callanen, A)

**Children**
- Clinical signs are “more impressive”
- Less autonomic signs
- More commonly have multiple pain sites
- Incongruent affect and pain (10/10 pain, no expression)
- Lower extremity more common
- Greater plasticity of the nervous system = better outcomes
- Parents that are more focused on pain result in greater pain and disability of the child

**Adults**
- Clinical signs are “less impressive”
- More autonomic signs
- Affects single extremity/site
- Upper extremity more common
- Worse plasticity of the nervous system with age

Prognosis for short-term improvement with physical therapy alone is good; however, there is a significant risk that CRPS will recur if psychological intervention is not included in treatment intervention

Additional Resources Continued...


References Continued...


Contact Information

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Feel free to contact us with any questions in the future!